Long Range Wireless HDMI/SDI HD Video Transmission Suite

User manual

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Preface

Thanks for purchasing our Long Range Wireless HDMI/SDI HD Video Transmission Suite. Before using this product, read this user manual carefully please. Follow the instruction to keep your safety and avoid products damage. This user manual might be modified irregularly because of updated products. And the manual is for instruction only; we do not guarantee the information and the suggestions.

1. Cautions

■ Logo and meaning

⚠ Careful, warning, dangerous, Pay attend to following items.

■ Cautions

- Do not use this product in the extreme hot, cold, dusty or humid environments.
- Prevent friction with hard objects.
- Avoid the product falling down from a high place, or it may damage the hardware.
- The product is not water proofed. So do not get any liquid into the unit please.
- Do not dismantle, assemble or alter the product arbitrarily.

2. About

■ Product model and standard

The Long Range Wireless HDMI/SDI Transmission Suite utilize today's most advanced wireless video transmission technology, which can realize the broadcast-class and uncompressed 3G SDI/HDMI HD video signal transmitted with no compression and zero delay. The suite includes one transmitter and one receiver, where the transmitter provides a 3G/HD SDI input and a HDMI input, and the receiver also provides a 3G/HD SDI output and a HDMI output. The wireless HD suite has 2 stick antennas in transmitter side, and 5 stick antennas in receiver side, and it can work in 5.1-5.9GHz frequency band and be flexibly software configured to licensed or ISM band of global different regions, as well as the side panel of both transmitter and receiver have been installed a frequency select knob, which provides maximum 10 workable frequency channels, and supports maximum 4 sets working simultaneously. The wireless suite can accept wide range DC power input, which is suitable for many kinds of camera battery model. The suite also can sustain ±8 kV ESD (HBM, contact discharge), the industry class metal case and professional heat design would guarantee most robust reliability.

■ Main features:

- HDMI 1.3 spec supports

- HDMI and 3G SDI input and output
- Highest resolution 1080p 60， no delay and no compression
- Support audio formats include Dolby True HD, DTS-master, etc.
- AES-128 encryption with air interface HD video data stream
- Support point to point, and point to multi points network topology
- Each RX paired to the unique TX in factory,
- 5GHz ISM frequency band，maximum 10 frequency channels selected by user knob, coexist with WIFI.
- Maximum transmission distance 300m
- Signal indicators for wireless power status, Video status and receiver RSSI
- Wide range power voltage input, adapt most kinds of camera battery
- Optional Sony F970 battery buckle, convenient for field battery install and replacement
- Any input and output ports with ±8 kV ESD protection level (HBM, contact discharge)
- Industrial metal case, stable and reliable

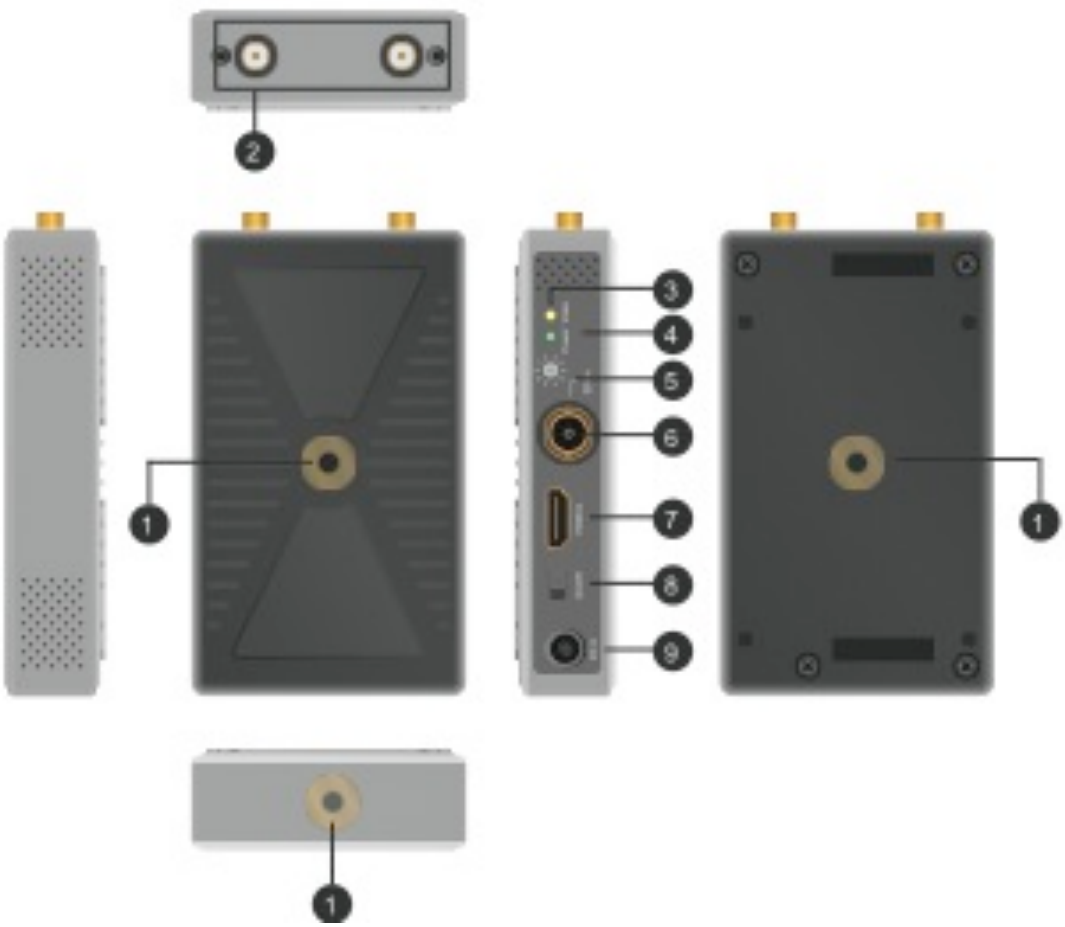
■ Parameters:

	Transmitter	Receiver
Interface	SDI Input（BNC Female）; HDMI Input(Type A female); 2 Antenna port(2 SMA male）; DC input (4 pin LEMO female)	SDI Output （ BNC Female ）; HDMI Output(Type A female); 5 Antenna port(SMA male）; DC input (4 pin LEMO female)
Supply voltage range	6.5-16.8V DC	6.5-16.8V DC
Power consumption	<6.5W	< 6 W

Size	(L x W x H): 120x 70 x 25mm， don't include antennas	(L x W x H): 160x 110 x 25mm， don't include antennas
Mass	380g	540g
Input Video Format	HDMI：525i, 625i, 720p 50/59.94/60,1080i 50/59.94/60,1080p23.98/24/25/29.9/30/50/ 59.94/60；HDMI Type A SDI：3G, HD, and SD-SDI (auto-selected), SMPTE-259/274/292/296/372/424/425；1x BNC	/
Output Video Format	/	HDMI： 525i, 625i, 720p 50/59.94/60,1080i 50/59.94/60,1080p23.98/24/25/29.9/30/50/5 9.94/60；HDMI Type A SDI：3G, HD, and SD-SDI (auto-selected), SMPTE-259/274/292/296/372/424/425； 1x BNC
Input Audio Format	SDI embedded 4 channel 24 bit/48KHz	/
Output Audio	/	SDI embedded 4 channel 24 bit/48KHz
Signal Indicator	POWER-Green； VIDEO-Yellow	POWER-Green ； Wireless RSSI-Green(5 LEDs)；VIDEO-Yellow
Frequency Band	5.1-5.9GHz，configurable with China, North American, Europe, etc	5.1-5.9GHz，configurable with China, North American, Europe, etc
Modulation Mode	OFDM 16QAM	OFDM 16QAM
Transmission Power	Maximum 21dBm	/
Receiver Sensitivity	/	-75dBm
Occupied Bandwidth	20/40MHz	20/40MHz
Temperature Range	0 ~ 40°C (operating condition); -20~60°C(Storage)	0 ~ 40°C (operating condition); -20~60°C(Storage)
Compliance	FCC; CE.	FCC; CE.

■ Product introduction

Transmitter:



① 1/4-20 Screw Hole

② RP-SMA male antenna connector

③ Video input indicator, 1 yellow LED

④ Power on Indicator, 1 green LED

⑤ Frequency selection knob,1-10

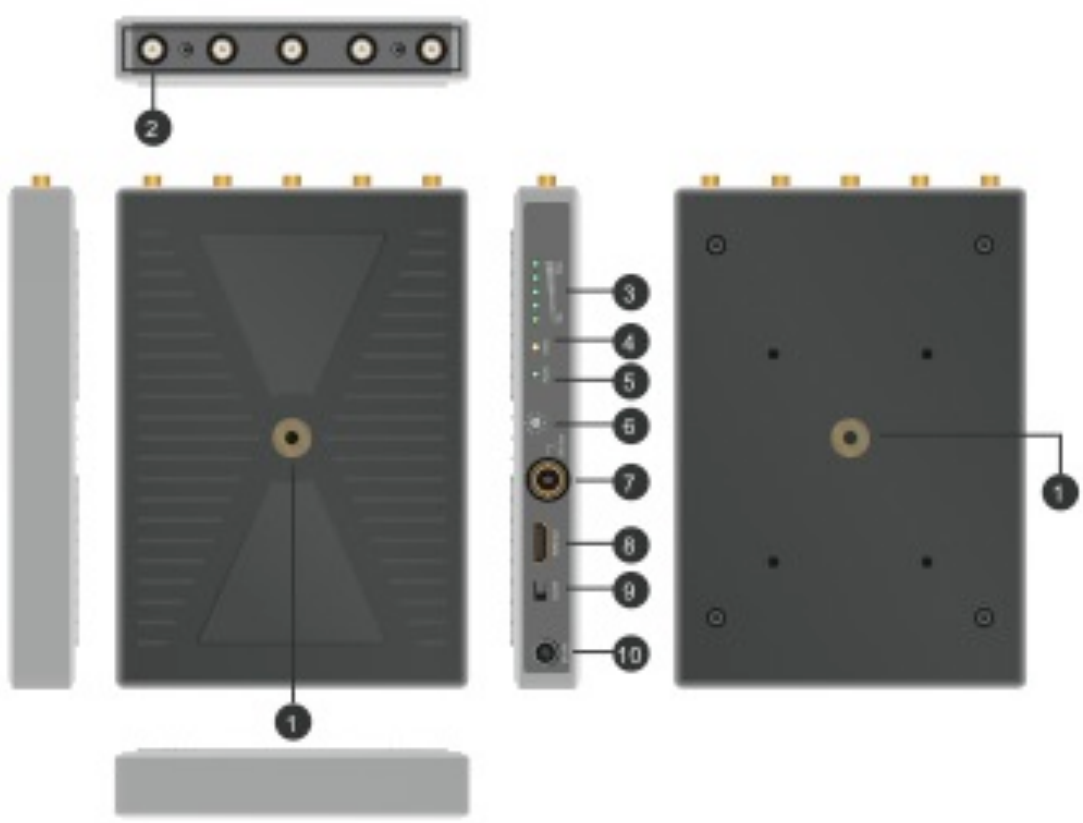
⑥ 3G SDI input

⑦ HDMI Input

⑧ DC power switch

⑨ DC input, LEMO 4-pin B series connector.

Receiver:



① 1/4-20 Screw Hole

② RP-SMA male antenna connector

③ RSSI(Wireless received signal strength indicator), 5 green LEDs

④ Video input indicator, 1 yellow LED

⑤ Power on Indicator, 1 green LED

⑥ Frequency selection knob,1-10

⑦ 3G SDI Output

⑧ HDMI Output

⑨ DC power switch

⑩ DC input, LEMO 4-pin B series connector.

■ Packing list

- 1 unit transmitter
- 1 unit receiver
- 7 5GHz Omni-directional and high efficiency antennas (SMA female)
- 2 DC convert cable (LEMO 4 pin-male to D-Type receptacle)
- 1 user manual, 2 torx screwdriver, 1 1/4-20 screw to ISO518 hot-shoe converter.
- SONY NP-F970/Panasonic D28s/Canon 5D2 battery buckle (Optional)
- 350*250*50mm carton packing

3. Installation

■ Installation details and cautions

- Transmitter side

a) Install 2 Omni-directional and high efficiency antennas to Transmitter's SMA male antenna connectors.

b) There are 3 1/4-20 screw nuts in transmitter metal case, which are located on surface, rear and bottom. So the user can utilize a 1/4 screw to ISO518 hot-shoe converter fix the transmitter on camera.

c) Install Battery into battery buckle if your product model includes battery buckle option; please note the battery model must match the battery buckle type.

d) The user can also utilize a subsidiary LEMO 4 pin male to D-Type receptacle power cable to get power input from an outside power source.

e) All TX installation guidelines see below figure.

- Receiver side
  a) Install 5 pcs Omni-directional and high efficiency antennas to receiver's SMA male antenna connectors.
  b) There are a 1/4-20 screw nut in the surface side of receiver. The user can utilize a 1/4 screw fix the subsidiary metal hook with the receiver.
  c) Install Battery into battery buckle if your product model includes the option of battery buckles; please note the battery model must match the battery buckle type.
  d) The user can also utilize a subsidiary LEMO 4 pin-male to D-Type receptacle power cable to get power input from an outside power source.
  e) All RX installation guidelines see below figure.

- Typical connection instruction

Connect camera SDI or HDMI output to transmitter SDI or HDMI input port, and the transmitter can fixed in hot-shoe port of the camera. Connect HDMI or SDI output port of the receiver to SDI or HDMI input port of the HD monitor. Make sure all antennas and batteries are equipped normally. See below figure.

Receiver
Transmitter
Monitor
Movie camera

4. Operation instruction

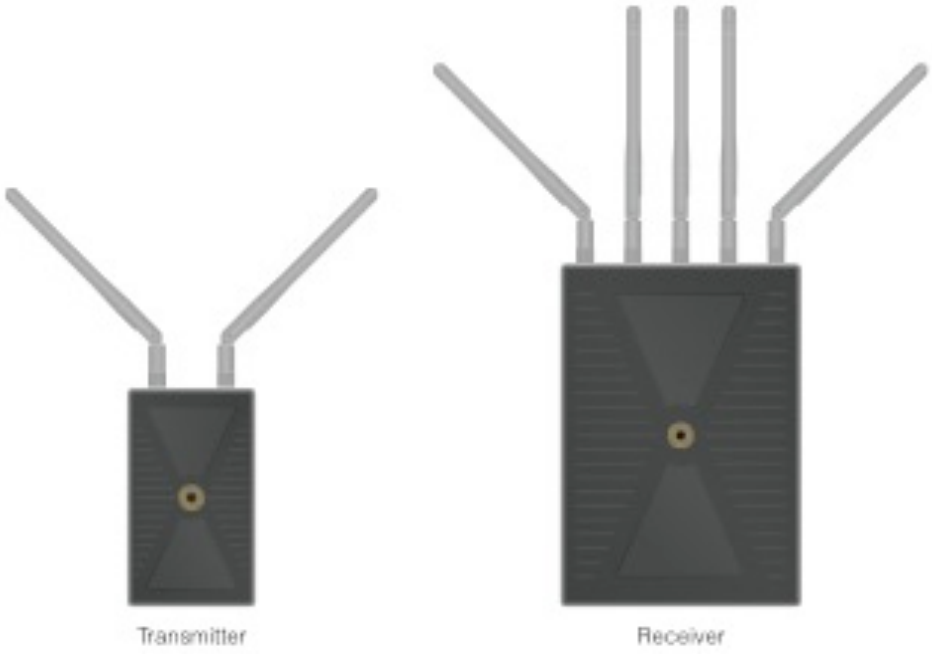
■ Getting started

After finishing all steps above, system is workable, follow below steps.

a) Ensure the video source output of the camera is OK, and the HD monitor is power on and switched to connected video input port.

b) Ensure all input, output SDI or HDMI cables are connected.

c) Ensure all antennas are installed, and it is better to keep TX 2 antennas and RX 5 antennas with orthogonal angle each other for best RF performance. Looks like below figure.



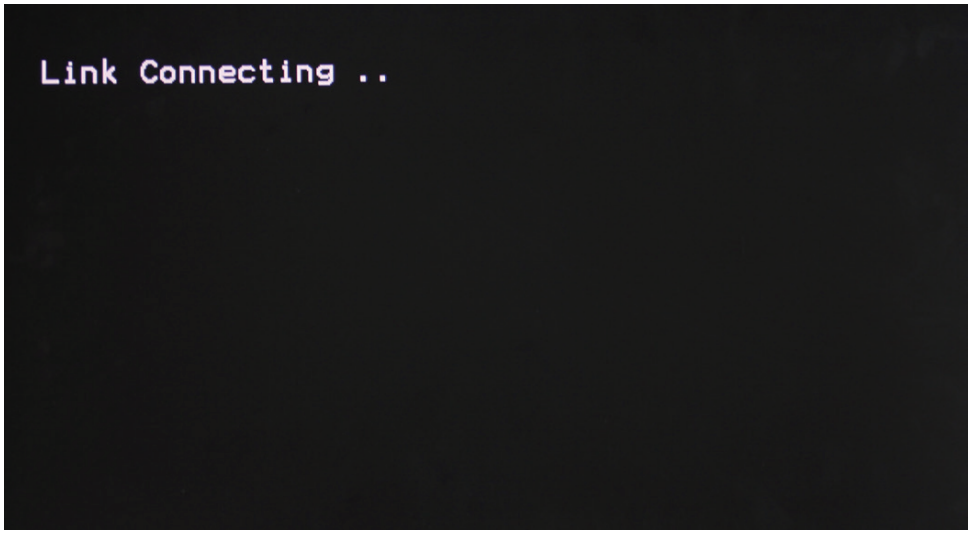
d) Ensure both the transmitter and receiver installed batteries or DC input ports connected to outside power sources. Then toggle power switch of transmitter and receiver to ‘ON’ respectively,

then ‘Power’ indicator will light.

e) Ensure the frequency knobs of transmitter and receiver are set with the same number, and this will make sure the transmitter and receiver work with same RF frequency.

f) If the camera is on and video input is OK, TX side ‘video’ indicator will light.

g) Before RX finished wireless link with TX, 5 “RSSI” indicators and “Video” indicators will be off; when wireless link is OK, “RSSI” indicators will light first, and “RSSI” will indicate the received RF signal strength. If the receiver detects normal wireless video internally from air interface, “Video” indicator will light. Before that, if SDI or HDMI video out port of the receiver has HD monitor connected, it will display an OSD of “Link connecting……” like below picture.



h) The system will spend 20-30 seconds on constructing

communication link, and real link period will depend on the current wireless channel condition. When wireless link is set up, “RSSI” light will light and indicate current received wireless signal strength, as well “Video” indicators will light, and then connected HD monitor will display the video and audio accordingly.

i) For the best wireless transmission performance, it need install the transmitter and receiver more than1.5m about the ground and keep the same height, and make sure no obstacles between them; Moreover, it is the best to keep the transmitter antennas face to face, and don’t turn round any sides with too big angle. The real transmission distance is also relevant to current air electromagnetic environment, because the system works in ISM band, it is exposure to all kind od 5GHz band air interference, we suggest the users should do a manual frequency sweep by adjusting frequency selection knob with a circle before using the equipment, then choose the best frequency channel for stable performance.

■ Input video port selection of transmitter

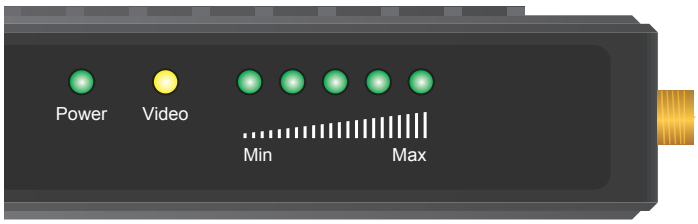
The transmitter has a 3G SDI video input port and a HDMI video input port, and the system will detect valid video source automatically of

SDI and HDMI port, and then switch it as main video input channel. If both SDI and HDMI have valid video inputs, the system will take SDI input as priority.

■ RSSI indicators

The receiver will calculate received RF signal strength internally and 5 “RSSI” LEDs will be used to indicate wireless signal power and quality. The user can observe the RSSI LED status to know if the current wireless link is reliable or not.

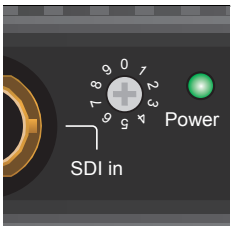
Lit RSSI LEDs volume	Wireless Link quality	Video Quality
4-5	Strong	Best
2-3	Middle	Good
1 or no lit LED	Weak	Visible Video Noise



■ Frequency selection and configuration

The wireless suite can work in 5.1-5.9GHz frequency band and be flexibly software configured to licensed or ISM band of global different

regions, as well as the side panel of both transmitter and receiver has been installed a frequency select knob, which provide maximum 10 workable frequency channels, and support maximum 4 sets working simultaneously. See below frequency knob figure.



5. Maintenance

■ Storage conditions

Products storage temperature should be -20°C~60°C. For long time storage requirement, please use original carbon boxes, and avoid from high humid, acid base or dusty place.

■ Maintenance

⚠ Warning

To ensure your safety, place choose well-known brand DC batteries, and guarantee suitable work conditions that battery manual mentioned.

6. Trouble shooting

■ Normal problems

a) No output on display

Check TX and RX power first, and see if TX or RX is powered from external power, then check if TX antennas and RX antennas are installed right. After that, check ‘Video’ indicator, if TX ‘Video’ indicator is not light, then check SDI or HDMI cable is plugged in and video source is ready please. Finally may check input video format is compatible with this product specs.

b) Poor output video quality

Check if SDI or HDMI input or output cable is plugged well, then checks how many receiver side ‘RSSI’ LEDs are lit, there should be 2-3 RSSI LEDs lit if the user want to get better video quality; if there is only 1 RSSI LED lit, that means the received wireless signal is weak, and should shorten the transmission distance.